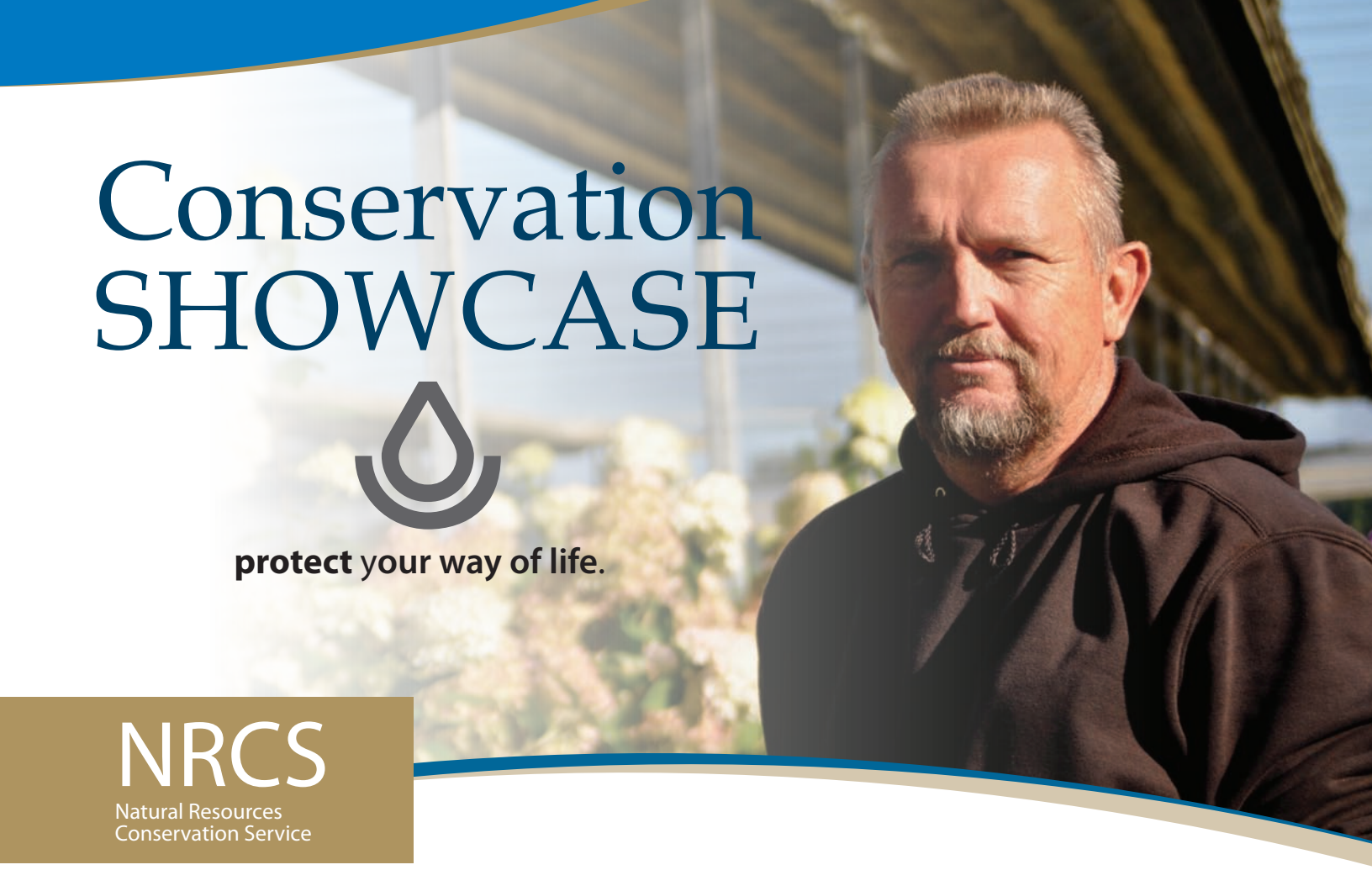
Conservation SHOWCASE



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NRCS
Natural Resources Conservation Service

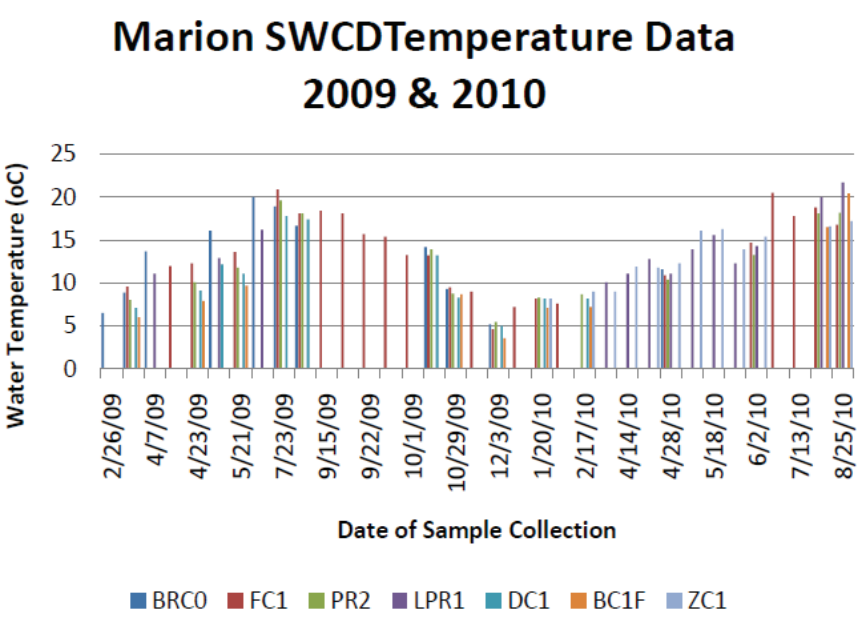
Stewardship and Profits Bloom on Zollner Creek

Dan Hammelman is a nurseryman on a mission. He grows top-quality flowers, fresh vegetables and wheat while using conservation best practices that keep soils fertile, healthy and intact, and waterways free from sediment.

The reason for Dan's stewardship is clear: "We are doing our part for a healthier environment." To carry out his mission, Dan and his wife Bernadette are partnering with USDA-Natural Resources Conservation Service (NRCS), neighboring farms, Marion Soil and Water Conservation District (SWCD), and several natural resource organizations to carry out an Agricultural Water Enhancement Program (AWEP) to improve water quality in Zollner Creek.

AWEP uses a watershed approach to improve surface water quality and irrigation practices along Zollner Creek and the tributaries feeding Zollner Creek watershed. The creek has been identified as a troubled waterway by Department of Environment Quality, earning it a 303(d) listing for bacteria, pathogens, temperature and sediment. This nurseryman is doing his part to reverse the dire situation and to bring his land and the waterways "back to how it was when my grandfather farmed."

"The Hammelmans are catalysts who are making a difference in the Zollner Creek area," says Les Bachelor, District Conservationist. "Dan and Bernadette are influencing neighbors, including those not currently enrolled in the AWEP program, to adopt conservation practices." The combined actions of several farms in a focused area are resulting in improved water quality in Zollner



Creek.

Several types of data are being monitored for the project by the Marion SWCD. The chart below shows the results of water temperature sample collections from February, through August, 2009. Other data being monitored by the Marion SWCD include Conductivity, Turbidity, E. coli, Dissolved Oxygen, pH, Nitrate and Phosphorus. This data will be provided in a final AWEP report after all the practices have been installed.

According to Les, "Zollner Creek is a high-profile system that is listed and we'd like to see it taken off that list. AWEP is another program to help promote that clean water."

The agricultural conservation practices employed on the Hammelman farm include vegetative filter strips, cover crops, nutrient management, and water conservation using irrigation water management. Dan and Bernadette were convinced of the value of conservation after they purchased a run-down farm a few years ago. "The results of the first year's harvest were surprising. Even though this farm had the same soil type as the farm next door, the crop was poor," says Dan with disappointment. He discovered upon further analysis "that the soil was dead. It really pointed out to me the important effects of soil microbiology."

After the pitiful harvest, Dan put the soil though a Presidedress Nitrogen Test (PSNT) – a soil test designed to analyze nitrate-nitrogen (NO3-N) levels in the soil so the landowner can adjust soil amendments for optimum performance. The test showed disturbing results. While Nitrogen was present, the soil lacked the necessary bacteria to change the Nitrogen over into a usable form. "And there were no worms and little organic matter in that soil," says Dan with a shake of his head. "We get so busy in day to day farming, we don't always take the time we should to take care of the soil." In addition to the ecological benefits of soil analysis, Dan points out that just applying the fertilizer to the soil without analysis is not the prudent solution: "Fertilizer isn't cheap, so you have to try to save what you can."

So the Hammelmans began a three-year strategic effort to increase the quality and production of the farm. They implemented conservation techniques including cover cropping, earthworms, and put some of the land in a wheat cover crop rotation. "Sometimes you have to go back to the beginning and start over. I think the addition of a lot of organic matter will get the bacteria going again. One field is looking good again." Dan is optimistic that with a little time and lots of conservation efforts, he can bring the land back to life.

On this new farm and on his main farm, Dan notes a change in how he prepares the earth for planting: "We have pretty much given up on plowing. We have reduced tillage using the chisel plow and hardly ever use a mobard plow anymore." Direct seed drilling is another popular

option to the traditional plowing, and no-till is an offered practice within the Zollner Creek AWEP.

The lack of organic matter in the soil on Hammelman's new farmland also created a problem with water retention. "With no organic matter, the water ran off and two days later the field was dry," notes Dan. In past years on Hammelman's main farm, he participated in the NRCS Environmental Quality Incentives Program (EQIP) which provided cost share for two highly efficient linear irrigation systems.

Converting inefficient irrigation systems in this identified Restricted Ground Water Area (RGWA) has been a high priority area since 2002 for NRCS and the local stakeholders. The Zollner Creek AWEP includes all of the RGWA and over 6,500 acres have been converted from inefficient irrigation systems to highly efficient linear, pivot or micro-irrigation systems since 2002.

Subsequent water conservation efforts through the past year's AWEP program have installed in-ground water sensors at 15" and 30" below the surface and have provided technical assistance from a consultant who set the meters initially. "The best parts of this program were first setting a benchmark for water measurement on the drip system and then the peace of mind that we were right on track with our watering program," says Dan. Dan and the other farmers on the program can monitor the real time water needs of the fields from a computer station in their farm offices.

Another aspect of the AWEP program was nutrient management. The Zollner Creek project encourages more soil sampling, and the services of a consultant who tests the fields for Nitrogen and other nutrients, and makes sure the farm plan for nutrient application is correct. "As a result of this program we are using more stabilizers on Nitrogen and Phosphorus and the plants are using the nutrients better," says Dan. The Hammelman's

Hammelman nursery

Filter strips protect waterways by trapping nutrients pesticides and sediments and preventing runoff.

have decreased the use of Phosphorus on their fields by 50 percent from three years ago. "We have followed up with some leaf analysis which showed we weren't shy of Nitrogen," says Dan. "Know your field."

Last fall, using AWEP funding, Dan planted permanent vegetative filter strip field borders of grass or hay along Bochsler Creek, which meanders through the Hammelman farm, and is one of the main tributaries to Zollner Creek. According to Les, filter strips trap nutrients, pesticides and sediments, preventing their runoff from entering waterways. University research shows that filter strips also provide desirable wildlife habitat. Dan says, "Field strips are an area of conservation you can't put a dollar value on– they are something we do to be good stewards and protect the streambanks." Les adds that if all three miles along the main stem of Zollner Creek and its tributaries could be edged with filter strip borders, the waterway would make real progress in being delisted as a 303(d) listed stream.

"We're doing things differently now," says Les. "We're doing more soil tests and we're doing more with micro-irrigation and with irrigation, nutrient, and pest management practices. The bottom line is the landowner is saving money if they are applying less and are being more precise. They are saving money and that will drive everything in itself."

As Dan watches his daughter and grandson work a tractor to turn a cover crop into a field that will soon be planted with statice and strawflowers for the cut flower market, he sums up the lessons learned, "The way I see it, somebody has to start these good practices. It's been a learning process for me – about what we do and don't want to do to our land."